IN THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1(Currently Amended).   A method for boundary detection in a stream of digital sample values, wherein the boundary is between an idle communication channel and a transmission packet on the same communications channel, the method comprising:

receiving the stream of digital sample values;

correlating a single digital sample value with a plurality of received digital sample values to calculate a correlation value; and

~~calculating a correlation value based on the correlation~~;

comparing the correlation value against a threshold to determine the presence of the boundary;~~and~~

~~determining the presence of the boundary based on the comparison~~.

2(Currently Amended).   The method of claim 1, wherein the single digital sample value is a recently received digital sample value.

3(Original).   The method of claim 1, wherein the stream of digital sample values are generated by periodically sampling the communications channel.

4(Currently Amended).   The method of claim 3, wherein the single digital sample value is a recently sampled value.

5(Original).   The method of claim 1, wherein the correlation is a multi-value correlation.

6(Original).   The method of claim 1, wherein the correlation is a multi-value correlation.

7(Original).   The method of claim 6, wherein the correlation is a three value correlation.

8(Original).   The method of claim 1, wherein the plurality of received digital sample values are selected from the received stream based on their position in different periods of a periodic sequence.

9(Currently Amended).   The method of claim 1, wherein the received stream is stored in memory, and wherein the boundary being detected is a boundary at an end of a periodic sequence, and wherein the plurality of received digital sample values are digital sample values stored in memory locations with memory addresses that correspond to integer multiples of a number of digital sample values in a period of the periodic sequence starting at the memory address of the memory location containing the single digital sample value.

10(Original).   The method of claim 9, wherein the number of digital sample values in the plurality of received digital sample values is less than or equal to the number of periods in the periodic sequence.

11(Currently Amended).   A method of packet detection in a stream of digital sample values, the method comprising:
    receiving the stream of digital sample values;
    correlating a single digital sample value with a plurality of received digital sample values
        to calculate a correlation value; and
    calculating a correlation value based on the correlation;
    comparing the correlation value against a threshold to determine the presence of the
        packet boundary.; and
    determining the presence of the packet based on the comparison.

12(Original). The method of claim 11, wherein the packet is transmitted over a previously idle communication channel.

13(Original). The method of claim 12, wherein the stream of digital sample values is produced by periodically sampling the communication channel.

14(Original). The method of claim 13, wherein a digital sample of the idle communications channel is different in value from a digital sample of the communications channel transmitting the packet.

15(Currently Amended). The method of claim 11, wherein the received stream is stored in memory, and wherein the correlating step comprises:
        comparing the single digital sample value with a plurality of received digital sample
                values;
        generating a one value for each time the single digital sample value matches with one of
                the digital sample values in the plurality; and
        generating a zero value for each time the digital sample value does not match with one of
                the digital sample values in the plurality.

16(Original). The method of claim 11, wherein the calculating step comprises summing up a correlation result resulting from each correlation of the digital sample value with the plurality of previously received digital sample values.

17(Original) The method of claim 11, wherein the correlating and calculating steps are performed more than once and an average correlation value is determined and compared against the threshold.

18(Original). The method of claim 11, wherein the packet detection is performed after each digital sample value is received.

19(Original). The method of claim 11, wherein the packet detection is performed after a specified number of digital sample values is received.

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